Statewide

Low Impact Development Training Program

2014-2015 COURSE CATALOG

DEPARTMENT OF ECOLOGY
State of Washington

Table of Contents

KEY to icons

1.0 = Module number (course)

W E = Training location (Western or Eastern WA)

= Online course offering

Introduction

Welcome

Welcome to the first session of the Washington Statewide Low Impact Development Training Program (Statewide LID Training Program). The Statewide LID Training Program reflects approximately two years of planning and needs assessment, and has been created to assist you—the design, implementation and maintenance community—with properly designing, building, and maintaining LID best management practice (BMP)/facility installations.

During the first session (September 2014 through May 2015), 64 trainings will be offered *free of charge* throughout western and eastern Washington. The trainings, or modules, are organized by level of training (Introductory, Intermediate, and Advanced), subject matter, audience, and region (western and eastern Washington). The audience- and region-specific organization and curriculum provides fundamental, practical, and highly technical information targeted for the various disciplines engaged in LID implementation.

Planning and course creation is ongoing; audiences are encouraged to check the training program website (www.wastormwatercenter.org/lidswtrainingprogram) periodically for up-to-date curriculum, dates and location information.

About this program

The Municipal Stormwater National Pollutant Discharge Elimination System (NPDES) general permits require widespread adoption of LID techniques into local development codes. These new practices and codes require significant changes in the way the private development community plans, designs, and builds sites, as well as the way the public sector inspects, maintains, and enforces maintenance of LID BMPs/facilities.

In order to assist jurisdictions and professionals affected by these new LID requirements, multiple stakeholders came together to request state funding for Ecology to develop and deliver LID trainings on the regulatory, design, and maintenance topics central for successful implementation of LID principles and practices. One initial and key product of the Statewide LID Training Program effort is the Washington State Low Impact Development Training Plan (LID Training Plan). The LID Training Plan is based on findings from an assessment that identified LID training needs among professionals across the state and determined the capacity of current and potential LID service providers to meet increased demand for training. The Statewide LID Training Program is based on this plan.

The first session of the Statewide LID Training Program consists of 64 trainings that will generally progress from Introductory- to Intermediate-level courses from September 2014 through March 2015. At that time, Advanced courses will begin and continue through May 2015. The Intermediate trainings offered by the Statewide LID Training Program will be equivalent to the WSU LID Technical Workshop Series (similar structure and topics). The Statewide LID Training Program will offer a certificate for those completing the Intermediate training series. The certificate issued through the Statewide LID Training Program will cover similar information to the WSU LID Technical Workshop Series certificate and is necessary to pursue Advanced courses.

How to use this catalog

This course catalog is organized into four major sections, designed to assist audiences in understanding the range of courses available throughout the state:

COURSE DESCRIPTIONS | **SCHEDULE OF COURSES** | **TRAINING LOCATIONS** | **MEET YOUR INSTRUCTORS**

COURSE DESCRIPTIONS

The Course Descriptions section offers continually updated descriptions of the seventeen (17) open modules and two (2) invitation-only modules being offered in 2014-2015, along with dates, locations in Western (W) Washington, Eastern (E) Washington, or Online (), and assigned instructors for scheduled trainings. These modules are grouped by knowledge level (Introductory, Intermediate, and Advanced) and include:

INTRO	1.0	Introduction to LID for Eastern Washington
	2.1	Introduction to LID for Inspection and Maintenance Staff
	2.2	Introduction to LID for Developers and Contractors: Make Money be Green
INTERMEDIATE	3.1	Intermediate LID Topics: NPDES Phase I and Phase II Permit Requirements
	3.2	Intermediate LID Design: Bioretention
	3.3	Intermediate LID Design: Permeable Pavement
	3.4	Intermediate LID Design: Site Assessment, Planning and Layout
	4.1	Intermediate LID Design: Rainwater Collection Systems and Vegetated Roofs
	4.2	Intermediate LID Design: Hydrologic Modeling
ADVANCED	5.1	Advanced Topics in LID Design: Bioretention
	5.2	Advanced Topics in LID Design: Permeable Pavement
	5.3	Advanced Topics for Long-term LID Operations: Bioretention
	5.4	Advanced Topics for Long-term LID Operations: Permeable Pavement
	6.0	Advanced Topics in LID Design: Hydrologic Modeling
	7.0	Advanced Topics in LID Design: Site Assessment, Planning and Layout
	8.1	Advanced Topics in LID Design: Rainwater Collection Systems and Vegetated Roofs
	8.2	Advanced Topics in LID Design: Bioretention Media
(CLOSED)	9.1	Train-the-Trainers (Service Providers)
	9.2	Train-the-Trainers (LID Topic Experts) (scope/ID curriculum and partners)

Each module is targeted toward a unique training audience and is designed to meet specific learning objectives. These goals are indicated at the front of each module section to guide course selection. Training events are organized within their modules by date.

Please note that these sections are updated as logistics are finalized. Missing information will become available as the date of the training approaches. Please visit the LID Training Program website at www.wastormwatercenter.org/lidswtrainingprogram to download the most up-to-date version of this catalog.

SCHEDULE OF COURSES

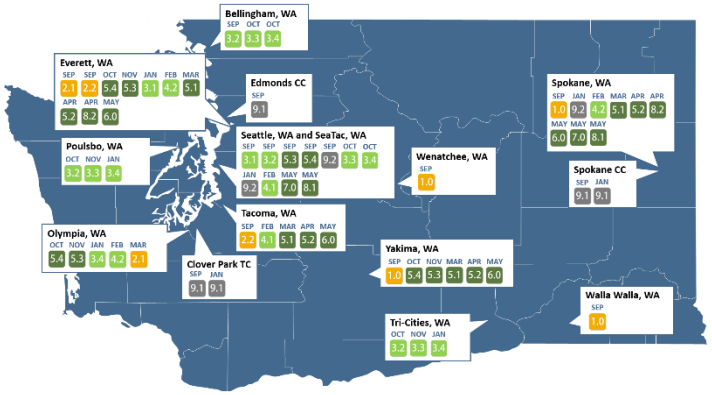
DATE	MODULE AND COURSE	LOCATION	REGISTER
SEP 8	1.0 E Introduction to LID for Eastern Washington	Yakima	Click here
SEP 9	1.0 E Introduction to LID for Eastern Washington	Spokane	Click here
SEP 10	1.0 E Introduction to LID for Eastern Washington	Walla Walla	Click here

The Schedule of Courses section provides a quick-reference table of the scheduled training events organized by date and location. Course titles link back to their corresponding descriptions above. Links at the far right of the schedule will take you to our online registration portal (Brown Paper Tickets), where you can register for your desired training.

Please double-check the date and location of your selected training upon registration. Courses are offered on multiple dates at multiple locations.

TRAINING LOCATIONS

This section provides a birds-eye view of the 2014-2015 course offerings scheduled in each of the fourteen training locations statewide. Clicking on an icon for your selected course, location, and calendar month will automatically take you to the catalog entry for that training event.



Some courses are also offered online and are not shown on this map. If your desired course is not offered at location convenient for you, check www.wastormwatercenter.org/lidswtrainingprogram to find out if the training is offered in an online format.

MEET YOUR INSTRUCTORS

This section offers a brief introduction to each of the fifteen (15) LID professionals who are scheduled to instruct or co-instruct the trainings.

How to register for courses

Below is detailed information about how to register for courses. In addition, a description about the waitlist, cancellation policy, and registrant follow-up are described. Registration is available online.

ONLINE REGISTRATION

Online registration is available on Brown Paper Tickets. **Admission is FREE for all events.** Please follow the step by step instructions below.

1. Click on the unique links in the course catalog to register for a specific course. Links will be available when registration for each course is open. The courses that do not have links are not yet open for registration.
2. Click on the link below to view a list of all courses that are currently open for registration. www.brownpapertickets.com/profile/686494
3. Click "view event" for the event for which you would like to register.
4. If you are registering for a course that is full, you will be able to register for the course waiting list. You will be notified one week prior to the course date whether you have been removed from the waiting list and put on the participant list.
5. Click "Add to Cart."
6. Answer the mandatory registration questions.
7. Enter your contact information and click "Complete Order."
8. You will immediately receive an email confirmation of your order.
9. You will receive reminder emails 2 weeks and 1 week before your course with driving directions and training-specific information.

WAITING LIST

Each course has a maximum number of participants. The maximum number varies by course as it is dependent on the course format and the training location. When the maximum number for a particular course is reached, registrants will be prompted to register for the waiting list. You will be notified immediately if a space becomes available.

CANCELLATION

If you are unable to attend a course that you have registered for, please email training@cascadiaconsulting.com or call 206-449-1163 **at least one week prior to the course date**. Include your name and the name of the course that you registered for. Each course will have a waitlist; therefore, it is important that you cancel your registration if you are no longer able to attend to provide waitlisted individuals with the opportunity to attend.

QUESTIONS

If you have any questions or difficulties with registration, please call 206-449-1163 or email training@cascadiaconsulting.com. We are happy to help you navigate the course catalog, find the right training for you, and help you register.

Course Descriptions

Please note that planning and course creation is still ongoing; audiences are encouraged to check this website (www.wastormwatercenter.org/lidswtrainingprogram) periodically for up-to-date curriculum, dates and location information.

Introductory Trainings (Modules 1.0, 2.1, and 2.2)

1.0 INTRODUCTION TO LID FOR EASTERN WASHINGTON

Target Audience

Eastern WA elected officials, department directors, and the construction and development community, but available to all audiences.

Learning Objectives

1. Participants gain a foundational understanding of basic LID principles and practices.
2. Participants are introduced to case studies of on-the-ground LID practices applicable to Eastern Washington and gain a basic understanding of common challenges in design, installation, operations and maintenance, and inspection.
3. Participants understand the current regulatory drivers and the Permit requirements for encouraging and implementing LID.
4. Participants know where resources exist to help further advance their understanding of LID, as well as how this course is nested in the Statewide LID Training Program.

This is an Introductory-level course for all audiences that provides a broad overview of LID principles, new LID regulations encouraging LID, and the basic structures and functions of the primary LID practices including bioretention, permeable pavement, compost-amended soils, vegetated roofs, rainwater collection systems, newly planted and retained trees, and dispersion techniques. Instruction for Introduction to LID will emphasize case studies to provide participants with practical lessons applicable to their regions.

Module 2.1 and Modules 3.2 through 3.4 are recommended as follow-up courses that provide more in-depth information for LID BMP inspection and maintenance and design, respectively.

There are no prerequisites for this course. Module 1.0 is not required for a certificate, but is recommended for those new to LID design and application as well as those considering the Intermediate and Advanced trainings.

1.0 E 1.0 Introduction to LID for Eastern Washington—Yakima

Date:	September 8, 2014
Duration:	4 hours
Location:	Yakima
Instructor(s):	H. Wilkinson, D. Atchison
Register here:	http://bpt.me/782342

1.0 Introduction to LID for Eastern Washington—Spokane

Date:	September 9, 2014
Duration:	4 hours
Location:	Spokane
Instructor(s):	H. Wilkinson, R. Dugopolski
Register here:	http://bpt.me/782287

1.0 Introduction to LID for Eastern Washington—Walla Walla

Date:	September 10, 2014
Duration:	4 hours
Location:	Walla Walla
Instructor(s):	G. Muller, R. Dugopolski
Register here:	http://bpt.me/782346

1.0 Introduction to LID for Eastern Washington—Wenatchee

Date:	September 18, 2014
Duration:	4 hours
Location:	Wenatchee
Instructor(s):	G. Muller, D. Atchison
Register here:	http://bpt.me/782340

1.0 Introduction to LID for Eastern Washington—ONLINE

Date:	March 2015
Duration:	4 hours
Location:	Online
Instructor(s):	R. Dugopolski, C. Hinman
Register here:	*Coming soon*

1.0 Introduction to LID for Eastern Washington—ONLINE

Date:	March 2015
Duration:	4 hours
Location:	Online
Instructor(s):	R. Dugopolski, C. Hinman
Register here:	*Coming soon*

2.1 INTRODUCTION TO LID FOR INSPECTION AND MAINTENANCE STAFF

Target Audience

Western WA inspection and enforcement staff and operations and maintenance personnel.

Learning Objectives

1. Participants gain a basic understanding of inspection and maintenance activities associated with LID BMPs.
2. Participants can identify priority elements when conducting inspections for LID facilities.
3. Participants can identify and understand the most common problems and associated solutions related to maintaining LID BMPs.

This is an Introductory-level course for inspection and enforcement staff and operations and maintenance personnel focused on post-construction inspections and maintenance of permanent LID BMPs. This course will provide the latest maintenance recommendations for standard preventive maintenance practices necessary to support the long-term function of bioretention facilities, permeable pavement, and vegetated roofs, as well as common maintenance thresholds that trigger more intensive facility repairs or retrofits.

Modules 5.3 and 5.4 are recommended as follow-up courses that provide more in-depth information for bioretention and permeable pavement inspections and maintenance.

There are no prerequisites for this course. Module 2.1 is required for the Long-term Operations certificate.

2.1 W 2.1 Introduction to LID for Inspection and Maintenance Staff—Everett

Date:	September 16, 2014
Duration:	4 hours
Location:	Everett
Instructor(s):	K. Forester, R. Dugopolski
Register here:	http://bpt.me/782335

2.1 W 2.1 Introduction to LID for Inspection and Maintenance Staff—Olympia (field session only)

Date:	March 2015
Duration:	4 hours
Location:	Olympia
Instructor(s):	R. Dugopolski, K. Forester
Register here:	*Coming soon*

2.2 INTRODUCTION TO LID FOR DEVELOPERS AND CONTRACTORS: MAKE MONEY BE GREEN

Target Audience

Western Washington developers, contractors, and construction management personnel.

Learning Objectives

1. Participants gain a basic understanding of efficient applications of LID BMPs.
2. Participants understand the basic principles of site assessment, site layout and construction sequencing to improve the application of proper design and long-term, effective operation of LID projects.
3. Participants understand how to minimize construction impacts.
4. Participants understand minimum requirements for construction and protection of LID BMPs during construction.

This is an Introductory-level course for developers, contractors, and construction management personnel focused on efficient application of LID BMPs and construction sequencing to minimize construction impacts to LID BMPs. The course will cover site assessment and layout, construction sequencing methods for installing bioretention and permeable pavement, regulatory requirements, and cost comparisons of LID and conventional stormwater management.

Modules 3.2 through 3.4 are recommended as follow-up courses that provide more in-depth information for bioretention; permeable pavement; and site assessment, planning, and layout.

There are no prerequisites for this course. Module 2.2 is required for designers and engineers pursuing the LID Design Certificate and for taking the Advanced-level courses required for the certification.

2.2 W 2.2 Introduction to LID for Developers and Contractors: Make Money be Green—Everett

Date:	September 22, 2014
Duration:	4 hours
Location:	Everett
Instructor(s):	C. Webb, J. King
Register here:	http://bpt.me/782328

2.2 W 2.2 Introduction to LID for Developers and Contractors: Make Money be Green—Tacoma

Date:	September 25, 2014
Duration:	4 hours
Location:	Tacoma
Instructor(s):	C. Webb, J. King
Register here:	http://bpt.me/812987

Intermediate Trainings (Modules 3.1, 3.2, 3.3, 3.4, 4.1, and 4.2)

3.1 INTERMEDIATE LID TOPICS: NPDES PHASE I AND PHASE II PERMIT REQUIREMENTS

Target Audience

All Western WA audiences

Learning Objectives

1. Participants understand which BMPs are considered On-site SW Management BMPs and which LID BMPs can also be used to meet MR#6 and/or MR#7.
2. Participants gain a general understanding of Element #13 of Minimum Requirement #2 (Construction Stormwater Pollution Prevention Plan) in the NPDES Phase I and Phase II municipal stormwater permits.
3. Participants gain an in-depth understanding of the on-site stormwater management (Minimum Requirement #5) requirements in the NPDES Phase I and Phase II permits.
4. Participants gain an in-depth understanding of the LID O&M requirements in the NPDES Phase I and Phase II municipal stormwater permits.

This is an Intermediate-level course for all audiences that focuses on NPDES Phase I and Phase II municipal stormwater permit requirements for LID including Element 13 of Minimum Requirement (MR) #2 (Protect LID BMPs), MR #5 (On-site Stormwater Management), and LID operations and maintenance (O&M) requirements. This course is intended to provide an overview of all of the requirements related to LID, but will cover the on-site stormwater management (MR #5) and LID O&M requirements in more depth than the other course offerings. Ecology staff will be available to answer questions related to LID requirements in the NPDES Phase I and Phase II municipal stormwater permits.

There are no prerequisites for this course. Module 3.1 is recommended but not required for the LID Design Certificate and for the Advanced-level courses required for certification.

3.1 W 3.1 Intermediate LID Topics: NPDES Phase I and Phase II Permit Requirements—SeaTac

Date:	September 29, 2014
Duration:	3.5 hours
Location:	SeaTac
Instructor(s):	R. Dugopolski, A. Sytsma, Ecology
Register here:	http://bpt.me/812997

3.1 W 3.1 Intermediate LID Topics: NPDES Phase I and Phase II Permit Requirements—Everett

Date:	January 2015
Duration:	3.5 hours
Location:	Everett
Instructor(s):	R. Dugopolski, A. Sytsma, Ecology
Register here:	*Coming soon*

3.2 INTERMEDIATE LID DESIGN: BIORETENTION

Target Audience

Designers, engineers, plan and permit reviewers, developers, and construction managers.

Learning Objectives

1. Participants gain the intermediate-level knowledge necessary for proper entry-level design and implementation of bioretention systems in residential and commercial settings (new and retrofit).
2. Participants learn skills necessary for basic site assessment and locating bioretention areas in residential and commercial settings.
3. Participants learn practical skills necessary for construction of basic bioretention systems.

This is an Intermediate-level course for engineers, planners, landscape architects, local jurisdiction staff, developers, construction managers, and allied disciplines that plan, design, review, and build bioretention projects. The course provides current design guidelines, construction details, water quality treatment performance, and practical experience necessary to properly design and build bioretention systems and rain gardens. The field component will give participants the opportunity to identify and test infiltration capabilities of bioretention.

There are no prerequisites for this course. Module 3.2 is required for the LID Design Certificate and for taking the Advanced-level courses required for certification.

3.2 W 3.2 Intermediate LID Design: Bioretention—Seattle

Date:	September 15, 2014
Duration:	8 hours
Location:	Seattle
Instructor(s):	C. Hinman, A. Lancaster
Register here:	http://bpt.me/813078

3.2 W 3.2 Intermediate LID Design: Bioretention—Bellingham

Date:	September 30, 2014
Duration:	8 hours
Location:	Bellingham
Instructor(s):	C. Webb, C. Hinman
Register here:	http://bpt.me/813056

3.2 W 3.2 Intermediate LID Design: Bioretention—Poulsbo

Date:	October 2014
Duration:	8 hours
Location:	Poulsbo
Instructor(s):	A. Lancaster, C. Webb
Register here:	*Coming soon*

3.2 E 3.2 Intermediate LID Design: Bioretention—Tri-Cities

Date:	October 2014
Duration:	8 hours
Location:	Tri-Cities
Instructor(s):	R. Dugopolski, D. Atchison
Register here:	*Coming soon*

3.3 INTERMEDIATE LID DESIGN: PERMEABLE PAVEMENT

Target Audience

Designers, engineers, plan and permit reviewers, developers, and construction managers.

Learning Objectives

1. Participants gain the intermediate-level knowledge necessary for proper design and implementation of permeable pavement systems in residential and commercial settings (new and retrofit).
2. Participants learn skills necessary for basic site assessment and locating permeable pavement areas in residential and commercial settings.
3. Participants learn practical skills necessary for construction of basic permeable pavement systems.

This is an Intermediate-level course for engineers, planners, landscape architects, local jurisdiction staff, developers, construction managers, and allied disciplines that plan, design, review, and build permeable pavement projects. The course provides current design guidelines, water quality treatment performance,

construction details, and practical experience necessary to properly design and build permeable pavement systems. The field component will give participants the opportunity to identify infiltration and structural problems and test infiltration capabilities of permeable pavement.

There are no prerequisites for this course. Module 3.2 is required for the LID Design Certificate and for taking the Advanced-level courses required for certification.

3.3 W 3.3 Intermediate LID Design: Permeable Pavement—Seattle

Date:	October 2014
Duration:	8 hours
Location:	Seattle
Instructor(s):	C. Webb, S. Kindred, C. Hinman
Register here:	*Coming soon*

3.3 W 3.3 Intermediate LID Design: Permeable Pavement—Bellingham

Date:	October 2014
Duration:	8 hours
Location:	Bellingham
Instructor(s):	C. Hinman, S. Kindred
Register here:	*Coming soon*

3.3 W 3.3 Intermediate LID Design: Permeable Pavement—Poulsbo

Date:	November 2014
Duration:	8 hours
Location:	Poulsbo
Instructor(s):	A. Lancaster, C. Webb
Register here:	*Coming soon*

3.3 E 3.3 Intermediate LID Design: Permeable Pavement—Tri-Cities

Date:	November 2014
Duration:	8 hours
Location:	Tri-Cities
Instructor(s):	R. Dugopolski, D. Atchison
Register here:	*Coming soon*

3.4 INTERMEDIATE LID DESIGN: SITE ASSESSMENT AND PLANNING/LAYOUT

Target Audience

Designers, engineers, plan and permit reviewers, developers, and construction managers.

Learning Objectives

1. Participants gain an intermediate-level understanding of overall site assessment with particular attention to infiltration capability of soils for roadway, lot, and open space layout within the LID context.
2. Participants gain an intermediate-level understanding of appropriate layout for roadway, lot, and open space to protect site hydrology and create livable and attractive developments.
3. Participants will gain an intermediate-level understanding of techniques to protect native soil and vegetation during site development.

This is an Intermediate-level course for engineers, architects, planners, landscape architects, local jurisdiction staff, developers, construction managers, and allied disciplines that plan, design, review, and build LID developments. The course provides current planning and design guidelines and design case studies demonstrating proper site assessment and layout within and LID context. Participants will work on site plans to develop construction plans and sequencing as well as inspection processes for bioretention, permeable pavement, compost amended soils, and vegetated roofs.

There are no prerequisites for this course. Module 3.2 is required for the LID Design Certificate and for taking the Advanced-level courses required for certification.

3.4 W 3.4 Intermediate LID Design: Site Assessment, Planning and Layout—Seattle

Date:	October 2014
Duration:	8 hours
Location:	Seattle
Instructor(s):	J. King G. Giraldo
Register here:	*Coming soon*

3.4 W 3.4 Intermediate LID Design: Site Assessment, Planning and Layout—Bellingham

Date:	October 2014
Duration:	8 hours
Location:	Bellingham
Instructor(s):	J. King, C. Webb
Register here:	*Coming soon*

3.4 E 3.4 Intermediate LID Design: Site Assessment, Planning and Layout—Tri-Cities

Date:	January 2015
Duration:	8 hours
Location:	Tri-Cities
Instructor(s):	J. King, D. Atchison
Register here:	*Coming soon*

3.4 W 3.4 Intermediate LID Design: Site Assessment, Planning and Layout—Olympia

Date:	January 2015
Duration:	8 hours
Location:	Olympia
Instructor(s):	J. King, C. Hinman
Register here:	*Coming soon*

3.4 W 3.4 Intermediate LID Design: Site Assessment, Planning and Layout—Poulsbo

Date:	January 2015
Duration:	8 hours
Location:	Poulsbo
Instructor(s):	J. King, C. Hinman
Register here:	*Coming soon*

4.1 INTERMEDIATE LID DESIGN: RAINWATER COLLECTION SYSTEMS AND VEGETATED ROOFS

Target Audience

Coming soon

Learning Objectives

Coming soon

This is an Intermediate-level course for engineers, planners, landscape architects, local jurisdiction staff, developers, construction managers, and allied disciplines that review and inspect rainwater collection systems and vegetated roof projects. The course provides current design guidelines, basic construction details, basic flow control and water quality treatment performance, and practical experience necessary to work with designers and contractors to ensure proper installation of these systems. The field component will give participants the opportunity to visit installations and discuss practical design and application issues.

This course is currently being developed. Stay tuned to www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates.

4.1 W 4.1 Intermediate LID Design: Rainwater Collection Systems and Vegetated Roofs—Seattle

Date:	February 2015
Duration:	4 hours
Location:	Seattle
Instructor(s):	J. King, C. Webb
Register here:	*Coming soon*

4.1 W 4.1 Intermediate LID Design: Rainwater Collection Systems and Vegetated Roofs—Tacoma

Date:	February 2015
Duration:	4 hours
Location:	Tacoma
Instructor(s):	J. King, C. Webb
Register here:	*Coming soon*

4.2 INTERMEDIATE LID DESIGN: HYDROLOGIC MODELING

Target Audience
Coming soon
Learning Objectives
Coming soon

This course is currently being developed. Stay tuned to www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates.

4.2 W 4.2 Intermediate LID Design: Hydrologic Modeling—Olympia

Date:	February 2015
Duration:	4 hours
Location:	Olympia
Instructor(s):	A. Lancaster, R. Dugopolski
Register here:	*Coming soon*

4.2 E 4.2 Intermediate LID Design: Hydrologic Modeling—Spokane

Date:	February 2015
Duration:	4 hours
Location:	Spokane
Instructor(s):	A. Lancaster, R. Dugopolski
Register here:	*Coming soon*

4.2 W 4.2 Intermediate LID Design: Hydrologic Modeling—Everett

Date:	February 2015
Duration:	4 hours
Location:	Everett
Instructor(s):	D. Atchison, R. Dugopolski
Register here:	*Coming soon*

Advanced Trainings (Modules 5.1, 5.2, 5.3, 5.4, 6.0, 7.0, 8.1, and 8.2)

5.1 ADVANCED TOPICS IN LID DESIGN: BIORETENTION

Target Audience
Coming soon
Learning Objectives
Coming soon

The Advanced courses build on the design trainings offered in Modules 3 and 4. The bioretention, permeable pavement, rainwater collection, green roofs, and bioretention media trainings will focus on specifications, design details, water quality treatment, and flow control performance at a level necessary to properly apply theses LID BMPs in complex retrofit and new construction settings. Site Assessment, Planning and Layout will emphasize soil and subsurface hydrologic analysis and innovative site layout at a level necessary to lay out LID projects in complex physical settings. Finally, the hydrologic modeling training will use hands-on modeling exercises that explore the more advanced capabilities of WWHM and MGSFlood to better describe water movement through bioretention, routing water through connected facilities and other aspects of distributed LID systems. The courses will emphasize hands-on training experience.

Participants entering the Advanced level design courses must have successfully completed Modules 3 and 4 and associated LID Design certificate. The WSU LID Technical Workshop Series certificate can be used to qualify for admission to the Advanced courses.

The Advanced LID courses are currently being developed. Visit the Washington State LID Training Program website at www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates for these course offerings.

5.1 W 5.1 Advanced Topics in LID Design: Bioretention—Everett

Date:	March 2015
Duration:	16 hours
Location:	Everett
Instructor(s):	C. Webb, C. Hinman
Register here:	*Coming soon*

5.1 W 5.1 Advanced Topics in LID Design: Bioretention—Tacoma

Date:	March 2015
Duration:	16 hours
Location:	Tacoma
Instructor(s):	C. Hinman, A. Lancaster
Register here:	*Coming soon*

5.1 E 5.1 Advanced Topics in LID Design: Bioretention—Yakima

Date:	March 2015
Duration:	16 hours
Location:	Yakima
Instructor(s):	A. Lancaster, C. Hinman
Register here:	*Coming soon*

5.1 E 5.1 Advanced Topics in LID Design: Bioretention—Spokane

Date:	March 2015
Duration:	16 hours
Location:	Spokane
Instructor(s):	A. Lancaster, C. Hinman
Register here:	*Coming soon*

5.2 ADVANCED TOPICS IN LID DESIGN: PERMEABLE PAVEMENT

Target Audience

Coming soon

Learning Objectives

Coming soon

The Advanced courses build on the design trainings offered in Modules 3 and 4. The bioretention, permeable pavement, rainwater collection, vegetated roofs, and bioretention media trainings will focus on specifications, design details, water quality treatment, and flow control performance at a level necessary to properly apply theses LID BMPs in complex retrofit and new construction settings. Site Assessment, Planning and Layout will emphasize soil and subsurface hydrologic analysis and innovative site layout at a level necessary to lay out LID projects in complex physical settings. Finally, the hydrologic modeling training will use hands-on modeling exercises that explore the more advanced capabilities of WWHM and MGSFlood to better describe water movement through bioretention, routing water through connected facilities and other aspects of distributed LID systems. The courses will emphasize hands-on training experience.

Participants entering the Advanced level design courses must have successfully completed Modules 3 and 4 and associated LID Design certificate. The WSU LID Technical Workshop Series certificate can be used to qualify for admission to the Advanced courses.

The Advanced LID courses are currently being developed. Visit the Washington State LID Training Program website at www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates for these course offerings.

5.2 E 5.2 Advanced Topics in LID Design: Permeable Pavement—Yakima

Date:	April 2015
Duration:	16 hours
Location:	Yakima
Instructor(s):	K. Gwilym, C. Webb
Register here:	*Coming soon*

5.2 W 5.2 Advanced Topics in LID Design: Permeable Pavement—Spokane

Date:	April 2015
Duration:	16 hours
Location:	Spokane
Instructor(s):	K. Gwilym, C. Webb
Register here:	*Coming soon*

5.2 W

5.2 Advanced Topics in LID Design: Permeable Pavement—Tacoma

Date:	April 2015
Duration:	16 hours
Location:	Tacoma
Instructor(s):	K. Gwilym, C. Hinman
Register here:	*Coming soon*

5.2 W

5.2 Advanced Topics in LID Design: Permeable Pavement—Everett

Date:	April 2015
Duration:	16 hours
Location:	Everett
Instructor(s):	K. Gwilym, C. Hinman
Register here:	*Coming soon*

5.3 ADVANCED TOPICS FOR LONG-TERM LID OPERATIONS: BIORETENTION

Target Audience

Inspection and enforcement staff and operations and maintenance personnel.

Learning Objectives

1. Participants will gain an understanding of the structure and function of bioretention components.
2. Participants will have an in-depth understanding of the primary inspection activities and tools to maintain bioretention facility function over time.
3. Participants will know the primary maintenance requirements for bioretention.
4. Participants can identify maintenance problems and associated solutions necessary for long-term function of bioretention facilities.

This is an Advanced-level course for inspection and enforcement staff and operations and maintenance personnel focused on post-construction inspections and maintenance of bioretention facilities and rain gardens. The course will cover in-depth information on what to look for during inspections of bioretention and the latest maintenance recommendations. The field component of the class will provide participants the opportunity to conduct bioretention inspections and consider solutions with particular attention to plant maintenance.

While not required, Module 2.1: Introduction to LID for Inspection and Maintenance Staff (Western Washington) is highly recommended for this course. Module 5.3 is required for the Long-Term LID Operations Certificate.

The Advanced LID courses are currently being developed. Visit the Washington State LID Training Program website at www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates for these course offerings.

5.3 W 5.3 Advanced Topics for Long-term LID Operations: Bioretention—Seattle

Date:	September 18, 2014
Duration:	8 hours
Location:	Seattle
Instructor(s):	R. Dugopolski, K. Forester
Register here:	http://bpt.me/813025

5.3 W 5.3 Advanced Topics for Long-term LID Operations: Bioretention—Everett

Date:	November 2014
Duration:	8 hours
Location:	Everett
Instructor(s):	A. Lancaster, R. Dugopolski
Register here:	*Coming soon*

5.3 E 5.3 Advanced Topics for Long-term LID Operations: Bioretention—Yakima

Date:	November 2014
Duration:	8 hours
Location:	Yakima
Instructor(s):	R. Dugopolski, K. Forester
Register here:	*Coming soon*

5.3 W 5.3 Advanced Topics for Long-term LID Operations: Bioretention—Olympia

Date:	November 2014
Duration:	8 hours
Location:	Olympia
Instructor(s):	A. Lancaster, K. Forester
Register here:	*Coming soon*

5.4 ADVANCED TOPICS FOR LONG-TERM LID OPERATIONS: PERMEABLE PAVEMENT

Target Audience

Inspection and enforcement staff and operations and maintenance personnel.

Learning Objectives

1. Participants will gain an understanding of the structure and function of permeable pavement components.
2. Participants will have an in-depth understanding of the primary inspection activities and tools to maintain permeable pavement function over time.
3. Participants will know the key maintenance requirements for permeable pavement.
4. Participants can identify maintenance problems and associated solutions necessary for long-term function of permeable pavement areas.

This is an Advanced-level course for inspection and enforcement staff and operations and maintenance personnel focused on post-construction inspections and maintenance of permeable pavement (pervious concrete, porous asphalt, permeable pavers, and grid systems). The course will cover in-depth information on what to look for during inspections of permeable pavement and the latest maintenance recommendations. The field component of the class will provide participants the opportunity to conduct permeable pavement inspection and consider solutions with particular attention to pavement infiltration over time.

While not required, Module 2.1: Introduction to LID for Inspection and Maintenance Staff (Western Washington) is highly recommended for this course. Module 5.4 is required for the Long-Term LID Operations Certificate.

The Advanced LID courses are currently being developed. Visit the Washington State LID Training Program website at www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates for these course offerings.

5.4 W 5.4 Advanced Topics for Long-term LID Operations: Permeable Pavement—Seattle

Date:	September 26, 2014
Duration:	6 hours
Location:	Seattle
Instructor(s):	K. Gwilym, R. Dugopolski
Register here:	http://bpt.me/813053

5.4 W 5.4 Advanced Topics for Long-term LID Operations: Permeable Pavement—Everett

Date:	October 2014
Duration:	6 hours
Location:	Everett
Instructor(s):	K. Gwilym, R. Dugopolski
Register here:	*Coming soon*

5.4 E 5.4 Advanced Topics for Long-term LID Operations: Permeable Pavement—Yakima

Date:	October 2014
Duration:	6 hours
Location:	Yakima
Instructor(s):	K. Gwilym, R. Dugopolski
Register here:	*Coming soon*

5.4 W 5.4 Advanced Topics for Long-term LID Operations: Permeable Pavement—Olympia

Date:	October 2014
Duration:	6 hours
Location:	Olympia
Instructor(s):	C. Hinman, R. Dugopolski
Register here:	*Coming soon*

6.0 ADVANCED TOPICS IN LID DESIGN: HYDROLOGIC MODELING

Target Audience
Coming soon
Learning Objectives
Coming soon

The Advanced courses build on the design trainings offered in Modules 3 and 4. The bioretention, permeable pavement, rainwater collection, vegetated roofs, and bioretention media trainings will focus on specifications, design details, water quality treatment, and flow control performance at a level necessary to properly apply theses LID BMPs in complex retrofit and new construction settings. Site Assessment, Planning and Layout will emphasize soil and subsurface hydrologic analysis and innovative site layout at a level necessary to lay out LID projects in complex physical settings. Finally, the hydrologic modeling training will use hands-on modeling exercises that explore the more advanced capabilities of WWHM and MGSFlood to better describe water movement through bioretention, routing water through connected facilities and other aspects of distributed LID systems. The courses will emphasize hands-on training experience.

Participants entering the Advanced level design courses must have successfully completed Modules 3 and 4 and associated LID Design certificate. The WSU LID Technical Workshop Series certificate can be used to qualify for admission to the Advanced courses.

The Advanced LID courses are currently being developed. Visit the Washington State LID Training Program website at www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates for these course offerings.

6.0 W 6.0 Advanced Topics in LID Design: Hydrologic Modeling—Tacoma

Date:	May 2015
Duration:	8 hours
Location:	Tacoma
Instructor(s):	A. Lancaster, R. Dugopolski
Register here:	*Coming soon*

6.0 E 6.0 Advanced Topics in LID Design: Hydrologic Modeling—Spokane

Date:	May 2015
Duration:	8 hours
Location:	Spokane
Instructor(s):	A. Lancaster, R. Dugopolski
Register here:	*Coming soon*

6.0 W 6.0 Advanced Topics in LID Design: Hydrologic Modeling—Everett

Date:	May 2015
Duration:	8 hours
Location:	Everett
Instructor(s):	D. Atchison, R. Dugopolski
Register here:	*Coming soon*

6.0 E 6.0 Advanced Topics in LID Design: Hydrologic Modeling—Yakima

Date:	May 2015
Duration:	8 hours
Location:	Yakima
Instructor(s):	D. Atchison, R. Dugopolski
Register here:	*Coming soon*

7.0 ADVANCED TOPICS IN LID DESIGN: SITE ASSESSMENT, PLANNING AND LAYOUT

Target Audience

Coming soon

Learning Objectives

Coming soon

The Advanced courses build on the design trainings offered in Modules 3 and 4. The bioretention, permeable pavement, rainwater collection, vegetated roofs, and bioretention media trainings will focus on specifications, design details, water quality treatment, and flow control performance at a level necessary to properly apply theses LID BMPs in complex retrofit and new construction settings. Site Assessment, Planning and Layout will emphasize soil and subsurface hydrologic analysis and innovative site layout at a level necessary to lay out LID projects in complex physical settings. Finally, the hydrologic modeling training will use hands-on modeling exercises that explore the more advanced capabilities of WWHM and MGSFlood to better describe water movement through bioretention, routing water through connected facilities and other aspects of distributed LID systems. The courses will emphasize hands-on training experience.

Participants entering the Advanced level design courses must have successfully completed Modules 3 and 4 and associated LID Design certificate. The WSU LID Technical Workshop Series certificate can be used to qualify for admission to the Advanced courses.

The Advanced LID courses are currently being developed. Visit the Washington State LID Training Program website at www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates for these course offerings.

7.0 W 7.0 Advanced Topics in LID Design: Site Assessment, Planning and Layout—Seattle

Date:	May 2015
Duration:	16 hours
Location:	Seattle
Instructor(s):	J. King, S. Kindred
Register here:	*Coming soon*

7.0 E 7.0 Advanced Topics in LID Design: Site Assessment, Planning and Layout—Spokane

Date:	May 2015
Duration:	16 hours
Location:	Spokane
Instructor(s):	J. King, S. Kindred
Register here:	*Coming soon*

8.1 ADVANCED TOPICS IN LID DESIGN: RAINWATER COLLECTION SYSTEMS AND VEGETATED ROOFS

Target Audience

Coming soon

Learning Objectives

Coming soon

The Advanced courses build on the design trainings offered in Modules 3 and 4. The bioretention, permeable pavement, rainwater collection, vegetated roofs, and bioretention media trainings will focus on specifications, design details, water quality treatment, and flow control performance at a level necessary to properly apply theses LID BMPs in complex retrofit and new construction settings. Site Assessment, Planning and Layout will emphasize soil and subsurface hydrologic analysis and innovative site layout at a level necessary to lay out LID projects in complex physical settings. Finally, the hydrologic modeling training will use hands-on modeling exercises that explore the more advanced capabilities of WWHM and MGSFlood to better describe water movement through bioretention, routing water through connected facilities and other aspects of distributed LID systems. The courses will emphasize hands-on training experience.

Participants entering the Advanced level design courses must have successfully completed Modules 3 and 4 and associated LID Design certificate. The WSU LID Technical Workshop Series certificate can be used to qualify for admission to the Advanced courses.

The Advanced LID courses are currently being developed. Visit the Washington State LID Training Program website at www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates for these course offerings.

8.1 W 8.1 Advanced Topics in LID Design: Rainwater Collection Systems & Vegetated Roofs—Seattle

Date:	May 2015
Duration:	12 hours
Location:	Seattle
Instructor(s):	J. King, C. Webb
Register here:	*Coming soon*

8.1 E 8.1 Advanced Topics in LID Design: Rainwater Collection Systems & Vegetated Roofs—Spokane

Date:	May 2015
Duration:	12 hours
Location:	Spokane
Instructor(s):	J. King, C. Webb
Register here:	*Coming soon*

8.2 ADVANCED TOPICS IN LID DESIGN: BIORETENTION MEDIA

Target Audience

Coming soon

Learning Objectives

Coming soon

The Advanced courses build on the design trainings offered in Modules 3 and 4. The bioretention, permeable pavement, rainwater collection, vegetated roofs, and bioretention media trainings will focus on specifications, design details, water quality treatment, and flow control performance at a level necessary to properly apply theses LID BMPs in complex retrofit and new construction settings. Site Assessment, Planning and Layout will emphasize soil and subsurface hydrologic analysis and innovative site layout at a level necessary to lay out LID projects in complex physical settings. Finally, the hydrologic modeling training will use hands-on modeling exercises that explore the more advanced capabilities of WWHM and MGSFlood to better describe water movement through bioretention, routing water through connected facilities and other aspects of distributed LID systems. The courses will emphasize hands-on training experience.

Participants entering the Advanced level design courses must have successfully completed Modules 3 and 4 and associated LID Design certificate. The WSU LID Technical Workshop Series certificate can be used to qualify for admission to the Advanced courses.

The Advanced LID courses are currently being developed. Visit the Washington State LID Training Program website at www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates for these course offerings.

8.2 W 8.2 Advanced Topics in LID Design: Bioretention Media—Everett

Date:	April 2015
Duration:	6 hours
Location:	Everett
Instructor(s):	C. Hinman, D. Ahearn
Register here:	*Coming soon*

8.2 E 8.2 Advanced Topics in LID Design: Bioretention Media—Spokane

Date:	April 2015
Duration:	6 hours
Location:	Spokane
Instructor(s):	C. Hinman, D. Ahearn
Register here:	*Coming soon*

Train-the-Trainer (Modules 9.1 and 9.2)

9.1 TRAIN-THE-TRAINERS (SERVICE PROVIDERS)

CLOSED COURSE

Target Audience

Coming soon

Learning Objectives

Coming soon

This course is currently being developed. Stay tuned to www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates.

9.1 W 9.1 Train-the-Trainers (Service Providers)—Clover Park Technical College CLOSED COURSE

Date:	September 2014
Duration:	6 hours
Location:	Clover Park Technical College
Instructor(s):	G. Muller, H. Wilkinson, C. Hinman
Register here:	*Registration by invitation only*

9.1 W 9.1 Train-the-Trainers (Service Providers)—Edmonds CLOSED COURSE

Date:	September 2014
Duration:	6 hours
Location:	Edmonds
Instructor(s):	G. Muller, H. Wilkinson, C. Hinman
Register here:	*Registration by invitation only*

9.2 E 9.1 Train-the-Trainers (Service Providers)—Spokane CLOSED COURSE

Date:	September 2014
Duration:	6 hours
Location:	Spokane
Instructor(s):	G. Muller, H. Wilkinson
Register here:	*Registration by invitation only*

9.1 W 9.1 Train-the-Trainers (Service Providers)—Clover Park Technical College CLOSED COURSE

Date:	January 2015
Duration:	6 hours
Location:	Clover Park Technical College
Instructor(s):	G. Muller, H. Wilkinson
Register here:	*Registration by invitation only*

9.1 E 9.1 Train-the-Trainers (Service Providers)—Spokane CLOSED COURSE

Date:	January 2015
Duration:	6 hours
Location:	Spokane
Instructor(s):	G. Muller, H. Wilkinson
Register here:	*Registration by invitation only*

9.2 TRAIN-THE-TRAINERS (LID TOPIC EXPERTS) (SCOPE/ID CURRICULUM AND PARTNERS FOR DEVELOPER MODULE)

CLOSED COURSE

Target Audience

Coming soon

Learning Objectives

Coming soon

This course is currently being developed. Stay tuned to www.wastormwatercenter.org/lidswtrainingprogram for curriculum, dates and location updates.

9.2 W 9.2 Train-the-Trainers (scope/ID curriculum & partners)—Seattle CLOSED COURSE

Date:	September 2014
Duration:	12 hours
Location:	Seattle
Instructor(s):	J. King, C. Hinman, J. Lenth
Register here:	*Registration by invitation only*

9.2 E 9.2 Train-the-Trainers (LID Topic Experts)—Seattle CLOSED COURSE

Date:	January 2015
Duration:	8 hours
Location:	Seattle
Instructor(s):	G. Muller, H. Wilkinson, C. Hinman
Register here:	*Registration by invitation only*

9.2 E 9.2 Train-the-Trainers (LID Topic Experts)—Spokane CLOSED COURSE

Date:	January 2015
Duration:	8 hours
Location:	Spokane
Instructor(s):	G. Muller, H. Wilkinson, C. Hinman
Register here:	*Registration by invitation only* http://www.brownpapertickets.com/profile/686494

Schedule of Courses

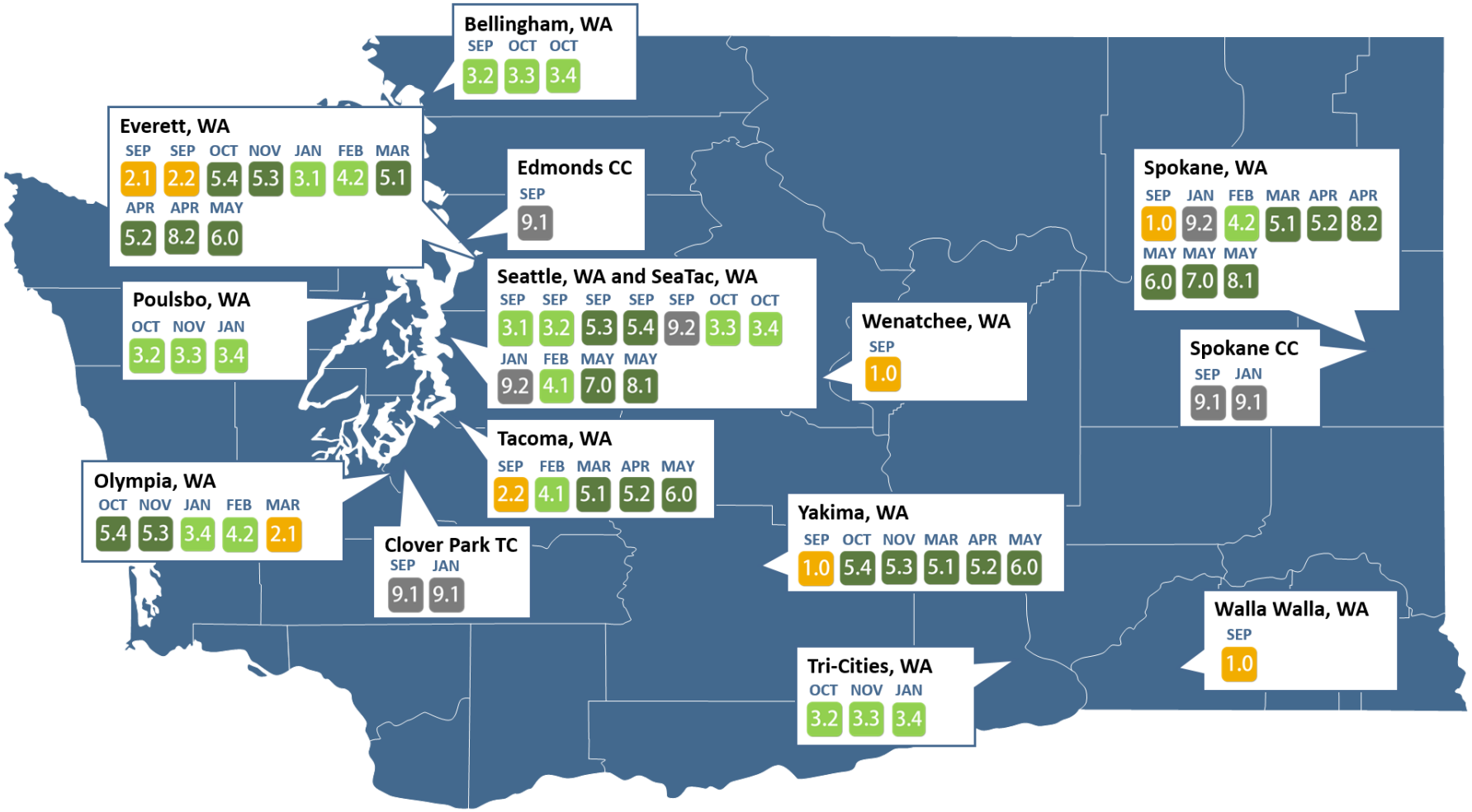
DATE	MODULE AND COURSE		LOCATION	REGISTER
SEP 8	1.0 E	Introduction to LID for Eastern Washington	Yakima	Click here
SEP 9	1.0 E	Introduction to LID for Eastern Washington	Spokane	Click here
SEP 10	1.0 E	Introduction to LID for Eastern Washington	Walla Walla	Click here
SEP 15	3.2 W	Intermediate LID Design: Bioretention	Seattle	Click here
SEP 16	2.1 W	Introduction to LID for Inspection and Maintenance Staff	Everett	Click here
SEP 18	1.0 E	Introduction to LID for Eastern Washington	Wenatchee	Click here
SEP 18	5.3 W	Advanced Topics for Long-term LID Operations: Bioretention	Seattle	Click here
SEP 22	2.2 W	Introduction to LID for Developers and Contractors: Make Money be Green	Everett	Click here
SEP 25	2.2 W	Introduction to LID for Developers and Contractors: Make Money be Green	Tacoma	Click here
SEP 26	5.4 W	Advanced Topics for Long-term LID Operations: Permeable Pavement	Seattle	Click here
SEP 29	3.1 W	Intermediate LID Topics: NPDES Phase I and Phase II Permit Requirements	SeaTac	Click here
SEP 30	3.2 W	Intermediate LID Design: Bioretention	Bellingham	Click here

DATE	MODULE AND COURSE		LOCATION	REGISTER
OCT	3.2 W	Intermediate LID Design: Bioretention	Poulsbo	*Coming soon*
OCT	3.2 E	Intermediate LID Design: Bioretention	Tri-Cities	*Coming soon*
OCT	3.3 W	Intermediate LID Design: Permeable Pavement	Bellingham	*Coming soon*
OCT	3.3 W	Intermediate LID Design: Permeable Pavement	Seattle	*Coming soon*
OCT	3.4 W	Intermediate LID Design: Site Assessment, Planning and Layout	Bellingham	*Coming soon*
OCT	3.4 W	Intermediate LID Design: Site Assessment, Planning and Layout	Seattle	*Coming soon*
OCT	5.4 W	Advanced Topics for Long-term LID Operations: Permeable Pavement	Everett	*Coming soon*
OCT	5.4 W	Advanced Topics for Long-term LID Operations: Permeable Pavement	Olympia	*Coming soon*
OCT	5.4 E	Advanced Topics for Long-term LID Operations: Permeable Pavement	Yakima	*Coming soon*
NOV	3.3 W	Intermediate LID Design: Permeable Pavement	Poulsbo	*Coming soon*
NOV	3.3 E	Intermediate LID Design: Permeable Pavement	Tri-Cities	*Coming soon*
NOV	5.3 W	Advanced Topics for Long-term LID Operations: Bioretention	Everett	*Coming soon*
NOV	5.3 W	Advanced Topics for Long-term LID Operations: Bioretention	Olympia	*Coming soon*
NOV	5.3 E	Advanced Topics for Long-term LID Operations: Bioretention	Yakima	*Coming soon*

DATE	MODULE AND COURSE		LOCATION	REGISTER
JAN	3.1 W	Intermediate LID Topics: NPDES Phase I and Phase II Permit Requirements	Everett	*Coming soon*
JAN	3.4 W	Intermediate LID Design: Site Assessment, Planning and Layout	Olympia	*Coming soon*
JAN	3.4 W	Intermediate LID Design: Site Assessment, Planning and Layout	Poulsbo	*Coming soon*
JAN	3.4 E	Intermediate LID Design: Site Assessment, Planning and Layout	Tri-Cities	*Coming soon*
JAN	9.1 W	Train-the-Trainers (Service Providers)	Clover Park	*Coming soon*
JAN	9.1 E	Train-the-Trainers (Service Providers)	Spokane	*Coming soon*
JAN	9.2 W	Train-the-Trainers (LID Topic Experts)	Seattle	*Coming soon*
JAN	9.2 E	Train-the-Trainers (LID Topic Experts)	Spokane	*Coming soon*
FEB	4.1 W	Intermediate LID Design: Rainwater Collection Systems and Vegetated Roofs	Seattle	*Coming soon*
FEB	4.1 W	Intermediate LID Design: Rainwater Collection Systems and Vegetated Roofs	Tacoma	*Coming soon*
FEB	4.2 W	Intermediate LID Design: Hydrologic Modeling	Everett	*Coming soon*
FEB	4.2 W	Intermediate LID Design: Hydrologic Modeling	Olympia	*Coming soon*
FEB	4.2 E	Intermediate LID Design: Hydrologic Modeling	Spokane	*Coming soon*
MAR	1.0	Introduction to LID for Eastern Washington	online	*Coming soon*
MAR	1.0	Introduction to LID for Eastern Washington	online	*Coming soon*
MAR	2.1 W	Introduction to LID for Inspection and Maintenance Staff (field session only)	Olympia	*Coming soon*
MAR	5.1 W	Advanced Topics in LID Design: Bioretention	Everett	*Coming soon*
MAR	5.1 E	Advanced Topics in LID Design: Bioretention	Spokane	*Coming soon*
MAR	5.1 W	Advanced Topics in LID Design: Bioretention	Tacoma	*Coming soon*
MAR	5.1 E	Advanced Topics in LID Design: Bioretention	Yakima	*Coming soon*
APR	5.2 W	Advanced Topics in LID Design: Permeable Pavement	Everett	*Coming soon*
APR	5.2 E	Advanced Topics in LID Design: Permeable Pavement	Spokane	*Coming soon*
APR	5.2 W	Advanced Topics in LID Design: Permeable Pavement	Tacoma	*Coming soon*
APR	5.2 E	Advanced Topics in LID Design: Permeable Pavement	Yakima	*Coming soon*
APR	8.2 W	Advanced Topics in LID Design: Bioretention Media	Everett	*Coming soon*
APR	8.2 E	Advanced Topics in LID Design: Bioretention Media	Spokane	*Coming soon*
MAY	6.0 W	Advanced Topics in LID Design: Hydrologic Modeling	Everett	*Coming soon*
MAY	6.0 E	Advanced Topics in LID Design: Hydrologic Modeling	Spokane	*Coming soon*
MAY	6.0 W	Advanced Topics in LID Design: Hydrologic Modeling	Tacoma	*Coming soon*
MAY	6.0 E	Advanced Topics in LID Design: Hydrologic Modeling	Yakima	*Coming soon*
MAY	7.0 W	Advanced Topics in LID Design: Site Assessment, Planning and Layout	Seattle	*Coming soon*
MAY	7.0 E	Advanced Topics in LID Design: Site Assessment, Planning and Layout	Spokane	*Coming soon*
MAY	8.1 W	Advanced Topics in LID Design: Rainwater Collection Systems and Vegetated Roofs	Seattle	*Coming soon*
MAY	8.1 E	Advanced Topics in LID Design: Rainwater Collection Systems and Vegetated Roofs	Spokane	*Coming soon*

Training Locations

Courses near you



Click the icon (1.0) for your selected course, location, and calendar month to jump to the associated course description and registration link.

Meet Your Instructors

Dylan Ahearn

Herrera Environmental Consultants, Inc.

Dylan Ahearn is an associate environmental scientist with 14 years of experience studying the environmental ramifications of human alteration to aquatic systems. He has expertise in the biogeochemical assessment of surface and subsurface waters, hydrologic analysis of urban and river-floodplain systems, geomorphic surveying, and nutrient spiraling measurement and analysis. Dr. Ahearn has designed studies, collected data, and conducted detailed pollutant loading assessments for over 50 stormwater treatment structures (e.g., wet ponds, bioretention, filter strips, green roofs, pervious pavement, and proprietary systems) in the Puget Sound area. He has extensive hands-on knowledge of green infrastructure and, having designed and implemented the monitoring network at the Washington State University Low Impact Development Research Center, is involved in cutting-edge stormwater treatment research. Through his work monitoring floodplains, streams, groundwater, and urban runoff, Dr. Ahearn has gained a detailed and practical knowledge of monitoring methods that he has shared with the classes that he teaches on the topic. In his spare time Dr. Ahearn teaches introductory geology courses at Edmonds Community College.

Dustin Atchison

CH2M Hill

Dustin Atchison is a water resources engineer with 17 years of experience in consulting firms specializing in stormwater management in the State of Washington. Mr. Atchison is a recognized leader in the Puget Sound region for his expertise in the design, development of master plans, guidelines and education for implementing LID and green infrastructure. He is currently serving as an instructor in the University of Washington's LID Certification Course. His recent projects include LID design for multi-disciplinary projects, stormwater master planning, stream and wetland restoration design, and hydrologic and hydraulic modeling of green stormwater infrastructure.

Rebecca Dugopolski

Herrera Environmental Consultants, Inc.

Rebecca Dugopolski, PE, is a senior engineer with Herrera Environmental Consultants in Seattle, Washington with over eight years of experience in stormwater monitoring, design, and NPDES permit compliance. She received her Bachelor's degree in Environmental Engineering from Michigan Technological University and her Master's degree in Civil and Environmental Engineering from the University of Washington. Ms. Dugopolski is currently working with the City of Seattle on updating their stormwater manual, implementing a LID training program in Eastern and Western Washington, and assisting several Phase II permittees with stormwater retrofit projects and permit compliance.

Kate Forester

Herrera Environmental Consultants, Inc.

Kate is an environmental designer with Herrera Environmental Consultants in Portland, Oregon who specializes in the design of vegetated stormwater facilities. Kate received her Bachelor's of Science degree in Environmental Studies from the University of Oregon and her Master's degree in Landscape Architecture from the University of Minnesota.

She has written design guidance for the Lake Oswego stormwater manual and the Western Washington LID O&M Guidance Document and has an extensive background in vegetated facility maintenance.

Greg Giraldo

SVR Design

Mr. Giraldo brings seventeen years of civil engineering experience relating to stormwater infrastructure design and implementation. As a director of design, project manager, and a leader in LID, his expertise includes sustainable building and site design and green stormwater applications for various private and public agencies. He began his career working with geotechnical engineers investigating natural processes, and later transferred these experiences to working with landscape architects and civil engineers at SvR Design Company. His example projects include design and construction oversight of demonstration LID projects, neighborhood-scale advanced natural drainage systems, and large scale green infrastructure projects as far away as Lima, Peru.

Kathryn Gwilym

SVR Design

Kathryn is a principal civil engineer at SvR with 18 years of experience in engineering design, project management, and construction administration. She brings expertise in complete street design, low impact development, storm drainage, porous pavements, utility and site development for both public works and private projects. Kathryn has worked on several complex, and large-scale housing developments and multi-phase public infrastructure developments and retrofits from planning through construction and maintenance. She is a leader in the world of innovative stormwater design for porous pavements and natural drainage systems but also understands the needs of other infrastructure and users as a result of her years of experience. She has also been a guest lecturer on porous pavements and green infrastructure at multiple technical workshops and held several national webinars on the subjects.

Curtis Hinman

Herrera Environmental Consultants, Inc.

Curtis Hinman is Senior Scientist with Herrera Environmental Consultants in Seattle, Washington. Mr. Hinman manages and provides technical guidance on a diverse portfolio of projects including bioretention media research, LID design, and statewide LID training programs. Before joining Herrera, Curtis was faculty with Washington State University (WSU) Extension and the Department of Biological Systems Engineering, and was the University's Green Stormwater Infrastructure Specialist. With WSU, he co-designed and was lead scientist for the WSU Low Impact Development Research Program which is one of the largest LID research facilities in the U.S. Mr. Hinman is the author of the "Low Impact Development Technical Guidance Manual for Puget Sound" and the "Rain Garden Handbook for Western Washington." Mr. Hinman also serves on national and regional advisory committees that develop stormwater management policy and technical guidelines and identify funding and research needs.

Scott Kindred

Kindred Hydro

Scott Kindred specializes in the design and implementation of stormwater infiltration as part of LID. With expertise in hydrogeology, contaminant fate and transport, geotechnical engineering, and civil stormwater design, Scott provides a unique multidisciplinary perspective in addressing the range of issues associated with stormwater infiltration and has developed innovative infiltration approaches to address challenging sites with relatively impermeable surface soils. He is also an expert in how water migrates through biofiltration soils, filter materials, and drainage rock, and is able to quickly assess and identify potential shortcomings in GSI designs.

Jason King

Herrera Environmental Consultants, Inc.

Jason King has 17 years of experience in landscape architecture with a focus on urban ecological site design, sustainable stormwater, green roofs, master planning, and healthcare projects. Jason is a design-oriented professional with a portfolio of work in Oregon, Washington, and California, and a strong focus on innovative research-based solutions, creative problem solving, and ecological urbanism. He has led and participated in multiple community design efforts, presentations, and research to expand the role of the landscape architecture profession utilizing site scale, neighborhood, and regional regenerative strategies. He has over 200 built planning and design projects, including many with innovative LID features such as green roofs, green streets, bioretention planters, pervious pavement, and stormwater art.

Alice Lancaster

Herrera Environmental Consultants, Inc.

Alice Lancaster, PE of Herrera is a civil engineer with over 16 years of experience, and offers specialized expertise in design and hydrologic/hydraulic analysis of Low Impact Development and Green Stormwater Infrastructure projects. She has worked with western Washington jurisdictions to develop LID policy, design guidance documents, and engineering standards, and has prepared GSI designs for both new and retrofit applications. Her expertise in the modeling and design of GSI facilities resulted in her selection by the Department of Ecology to sit on the LID Technical Advisory Committee to develop Washington LID requirements and to support the recent update to the "LID Technical Guidance Manual for Puget Sound."

John Lenth

Herrera Environmental Consultants, Inc.

John has over 20 years of experience in water resource science, management, and planning. As the Water Practice Director at Herrera Environmental Consultants, he oversees a team of scientists, engineers, and landscape architects that provide integrated low impact development design services. John has also designed and implemented numerous studies to characterize the treatment effectiveness of low impact development practices.

Gretchen Muller

Cascadia Consulting Group, Inc.

Gretchen brings thirteen years of experience designing and implementing training programs that engage public and professional audiences around complex natural resource issues, particularly related to stormwater and low impact development. Gretchen has both public and non-profit experience managing education and outreach programs to further regional conservation initiatives and improve municipal and community adoption of LID. Gretchen also brings expertise in community engagement, multi-stakeholder facilitation, training, curriculum development, research and evaluation, and inclusive outreach. Recent projects include: the development of the Washington State LID Training Plan, designing and delivering trainings to elected officials and city managers, and developing a training and associated toolkit for local government staff on the integration of LID into local codes, standards, and other enforceable documents.

Anneliese Sytsma

Herrera Environmental Consultants, Inc.

Anneliese Sytsma is a staff engineer at Herrera Environmental Consultants in Seattle, Washington with experience in stormwater management, stormwater facility design, and municipal stormwater and code review and implementation. She received her Bachelor's degree in Civil and Environmental Engineering from Seattle University. Ms. Sytsma recently assisted the City of Seattle and Pierce County with updating their stormwater manuals for equivalency with Ecology's 2012 Stormwater Management Manual for Western Washington. She also has been involved in preparing NPDES permit gap analyses and Stormwater Comprehensive Plans for several Phase II jurisdictions in Western Washington.

Chris Webb

Herrera Environmental Consultants, Inc.

Chris Webb is a licensed civil engineer in the States of Washington and Oregon and a 2011 LEED™ Fellow with over 14 years of experience with the design of LID practices. Some of Chris' notable projects include the first pervious concrete driving surface in the public right of way in the state of Washington, the first permitted sole-source potable rainwater harvesting system in King and Skagit Counties, and the first bioretention cell in the public right of way in Bellingham. Chris has presented LID at numerous workshops and trainings since 1999.

Hilary Wilkinson

Veda Environmental

Hilary Wilkinson has over 14 years of experience designing and implementing technical workshops and training programs in the Puget Sound region on a range of topics, including stormwater management and LID. Hilary worked with WSU Research and Extension Center to design and implement the state's first LID Technical Training Plan for stormwater professionals throughout the Puget Sound region. She has done extensive outreach and education to local government staff and elected officials on LID issues, and has facilitated numerous LID technical efforts, including managing the development of the Washington State LID Training Plan and facilitating the LID Technical Advisory Group that oversaw development of the 2012 LID Technical Guidance Manual for Puget Sound.